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Uitenbroek

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(54) **CHARGE CONTROL DEVICE FOR AND METHOD FOR CONTROLLING THE FUNCTIONING OF A RECIPROCATING INTERNAL COMBUSTION ENGINE**

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(58) **Field of Search** ..... 123/399, 336, 123/337, 308, 432, 80 R, 190.1

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(57) **ABSTRACT**

A charge control apparatus and a method for operating an reciprocating internal combustion engine are provided. The charge control apparatus includes a rotary disc valve disposed in the intake conduit upstream of the intake valve and connected to a motor and a control unit. The rotary disc valve is movable by the motor between a position in which the rotary disc valve closes the intake conduit and a position in which it permits flow along the intake conduit to the intake valve. The control unit controls the movement of the rotary disc valve into its closing position in the intake conduit such that the closing time point of the rotary disc valve is set increasingly ahead of the closing time point of the intake valve as a function of decreasing performance demands.

15 Claims, 9 Drawing Sheets